CLAIMS

What is claimed is:

1. A carburetor for an internal combustion engine, comprising:

a body having a first end that fastens to an air filter, a second end that fastens to an intake port of a cylinder head, an intake bore formed in the first end, a throttle bore formed in the second end, a venturi formed between the intake bore and the throttle bore that interconnects the intake bore and throttle bore, and a jet passageway extending from the venturi through the body for providing fuel to the venturi;

a fuel bowl, having walls that define an interior volume, fastened to the body;

a fuel enrichment system, responsive to the vibration of the engine, having a passage formed in the body that has an inlet that communicates with the intake bore and an outlet that communicates with the jet passageway, wherein the fuel enrichment system reduces the flow of air through the passage when the engine is at speeds less than idle speed and increases the flow of air through the passage when the engine is at speeds greater than cranking speed.

2. A carburetor for an internal combustion engine, as recited in claim 1, comprising a jet nozzle disposed within the jet passageway, wherein the outlet of the passage of the fuel enrichment system communicates with the jet nozzle.

3. A carburetor for an internal combustion engine, as recited in claim 1, comprising a bowl vent, formed in the body, interconnecting the intake bore and the interior volume of the fuel bowl, wherein the inlet of the passage of the fuel enrichment system communicates with the bowl vent.

4. A carburetor for an internal combustion engine, as recited in claim 3, comprising a jet nozzle disposed within the jet passageway, wherein the outlet of the passage of the fuel enrichment system communicates with the jet nozzle.

5. A carburetor for an internal combustion engine, as recited in claims 1, 2, 3, or 4, wherein the fuel enrichment system comprises:

a valve seat disposed within the passage in the body, the valve seat having a passage to allow the flow of air through the valve seat; and

a ball disposed within the passage in the body, wherein the ball seats against the valve seat blocking the passage in the valve seat when the engine is at speeds less than cranking speed and unseats from the valve seat and vibrates within the passage in the body thereby unblocking the passage in the valve seat and allowing air to flow through the passage in the valve seat when the engine is at speeds greater than cranking speed.

6. A carburetor for an internal combustion engine, as recited in claim 5, wherein:

the passage in the body is formed by a generally vertical bore, which extends from a proximal end at the inlet of the passage of the fuel enrichment system through the body to a distal end that communicates with the internal volume of the fuel bowl, and a generally horizontal bore, which extends from a proximal end at the generally vertical bore to a distal end at the outlet of the passage of the fuel enrichment system;

the valve seat is press fit into the distal end of the generally vertical bore; and

the passage in the valve seat allows the flow of air from the vertical bore to the horizontal bore.

7. A carburetor for an internal combustion engine, as recited in claim 6, wherein the passage through the valve seat comprises:

a generally vertical bore that communicates with the generally vertical bore of the passage and extends into the valve seat; and

a generally horizontal bore that extends from the generally vertical bore in the valve seat to the generally horizontal bore of the passage.

8. A carburetor for an internal combustion engine, as recited in claim 7, wherein the passage through the valve seat further comprises a second generally horizontal bore, perpendicular to the horizontal bore, that extends from the generally vertical bore in the valve seat to the generally horizontal bore of the passage.

9. An internal combustion engine having a carburetor that is fastened between an air filter and an intake port of a cylinder head, the carburetor comprising:

a body having a first end that fastens to the air filter, a second end that fastens to the intake port, an intake bore formed in the first end, a throttle bore formed in the second end, a venturi formed between the intake bore and the throttle bore that interconnects the intake bore and throttle bore, and a jet passageway extending from the venturi through the body for providing fuel to the venturi;

a fuel bowl, having walls that define an interior volume, fastened to the body;

a fuel enrichment system, responsive to the vibration of the engine, having a passage formed in the body that has an inlet that communicates with the intake bore and an outlet that communicates with the jet passageway, wherein the fuel enrichment system reduces the flow of air through the passage when the engine is at speeds less than cranking speed and increases the flow of air through the passage when the engine is at speeds greater than cranking speed.

10. An internal combustion engine, as recited in claim 9, comprising a jet nozzle disposed within the jet passageway, wherein the outlet of the passage of the fuel enrichment system communicates with the jet nozzle.

11. An internal combustion engine, as recited in claim 9, comprising a bowl vent, formed in the body, interconnecting the intake bore and the interior volume of the fuel bowl, wherein the inlet of the passage of the fuel enrichment system communicates with the bowl vent.

12. An internal combustion engine, as recited in claim 11, comprising a jet nozzle disposed within the jet passageway, wherein the outlet of the passage of the fuel enrichment system communicates with the jet nozzle.

13. An internal combustion engine, as recited in claims 9, 10, 11, or 12, wherein the fuel enrichment system comprises:

a valve seat disposed within the passage in the body, the valve seat having a passage to allow the flow of air through the valve seat; and

a ball disposed within the passage in the body, wherein the ball seats against the valve seat blocking the passage in the valve seat when the engine is at speeds less than cranking speed and unseats from the valve seat and vibrates within the passage in the body thereby unblocking the passage in the valve seat and allowing air to flow through the passage in the valve seat when the engine is at speeds greater than cranking speed.

14. An internal combustion engine, as recited in claim 13, wherein:

the passage in the body is formed by a generally vertical bore, which extends from a proximal end at the inlet of the passage of the fuel enrichment system through the body to a distal end that communicates with the internal volume of the fuel bowl, and a generally horizontal bore, which extends from a proximal end at the generally vertical bore to a distal end at the outlet of the passage of the fuel enrichment system;

the valve seat is press fit into the distal end of the generally vertical bore; and

the passage in the valve seat allows the flow of air from the vertical bore to the horizontal bore.

15. An internal combustion engine, as recited in claim 14, wherein the passage through the valve seat comprises:

a generally vertical bore that communicates with the generally vertical bore of the passage and extends into the valve seat; and

a generally horizontal bore that extends from the generally vertical bore in the valve seat to the generally horizontal bore of the passage.

16. An internal combustion engine, as recited in claim 15, wherein the passage through the valve seat further comprises a second generally horizontal bore, perpendicular to the horizontal bore, that extends from the generally vertical bore in the valve seat to the generally horizontal bore of the passage.

17. A carburetor for an internal combustion engine, comprising:

a throat having a bore that extends through it from a first end into which combustion air is drawn to a second end through which an air/fuel mixture exits the throat;

a fuel bowl having walls that define an interior volume;

a jet passageway from the interior volume of the fuel bowl to the bore of the throat to provide a flow of fuel from the interior volume of the fuel bowl to the bore of the throat to mix with the flow of air through the bore;

a fuel enrichment system in communication with the bore of the throat, the fuel enrichment system having an air passageway that supplies a flow of air to the jet passageway at engine speeds above a start-up cranking speed of the engine, the device being responsive to vibration of the engine at normal engine operating speeds to reduce the flow of air through the air passageway to the jet passageway above the start-up cranking speed of the engine.

18. A carburetor for an internal combustion engine, as recited in claim 17, wherein the air passageway of the fuel enrichment device opens in the jet passageway.

19. A carburetor for an internal combustion engine, as recite in claim 17, wherein the fuel enrichment device has an element that opens an air valve to increase the flow or air through the air passageway in response to vibration of the engine at normal engine operating speeds above the start-up cranking speed of the engine.

20. A carburetor for an internal combustion engine, as recited in claim 19, wherein the element is a ball, and the ball vibrates at normal engine operating speeds above the start-up cranking speed of the engine to open the air valve.